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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/800,905

**Applicant(s)**

TOTIR ET AL.

**Examiner**

Raymond Alejandro

**Art Unit**

1795

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06/04/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8-12, 14-24, 28-35, 39-43 and 45-54 is/are pending in the application.
- 4a) Of the above claim(s) 29, 30 and 47-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12, 14-20, 24, 28, 39-40, 43, 45-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

This office action is responsive to the amendment filed 06/04/08. The applicant has overcome all of the 35 USC 103 rejections except for the one based upon Krause et al'081. The 35 USC 102 rejection has not yet been satisfactorily overcome by the applicant. Refer to the abovementioned amendment for content of applicant's rebuttal arguments and remarks. Thus, all pending claims are now finally rejected over prior art references as formulated hereunder and for the reasons of record.

### ***Election/Restrictions and Claim Disposition***

1. Claims 29-30 and 47-54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 03/16/07.
2. Only claims 1-5, 12, 14-20, 24, 28, 39-40, 43 and 45-46 remain active for examination.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 45-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. The language "*a cathode containing only MnO<sub>2</sub> an active cathode material...*" in claim 45 is of uncertain meaning, thereby rendering the scope of the claim vague and indefinite. The

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term is not defined by the claim, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For instance, applicant amended claim 45 to recite “containing only  $MnO_2$ ” but it appears that another active cathode material is within the scope of the present claim. Thus, this claim appears to exclude materials other than  $MnO_2$  but at the same time it appears to include other active cathode material(s).

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 12, 17-20, 24, 28, 39-40, 43 and 45-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyaki et al 2002/0114993.

As to claims 1-2, 17-18, 39-40, 43 and 45-46:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include  $MnO_2$  (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a

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current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole.*

***Examiner's note:** it is noted that the present claims include the limitation that the electrolyte contains the bis(oxalato)borate salt at a concentration that is equal to or less than about 0.1 M (claims 1, 17, 39 and 45) and 0.05M (claims 12, 24, 43). Therefore, that limitation still includes zero (0) as a lower limit. Accordingly, the foregoing limitation also reads on free of "LiBOB" (the claimed Li-salt) or "0 mol % or mass % or volume % at all" of LiBOB (See MPEP 2173.05(c) Numeral Ranges & Amounts Limitations, II. Open-ended Numerical Ranges. Note that the electrolyte of Miyaki et al can contain Li-salts other than LiBOB. This interpretation is provided herein because the Examiner remains unsure about the intended scope (extent) of the applicant's invention. In fact, there is no question that a reasonable interpretation of the above claims is that the concentration of the claimed Li-salt be zero (0). If that is the case, a plurality of references would read on applicant's invention.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Miyaki et al envision using an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 19-20:

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Examples of preferred positive electrode active materials include  $\text{MnO}_2$  (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claim 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be  $\text{LiCF}_3\text{SO}_3$  (Li-trifluoromethane sulfonate) (P0450).

*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-5, 12, 17-20, 24, 28, 39-40, 43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al 2002/0114993 in view of Wietelmann et al 6506516, and further in view of Furbringer 5886196.

As to claims 1, 17, 39 and 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include  $\text{MnO}_2$  (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole. Examiner's note: in this case, the Miyaki et al reference is being interpreted in a different manner than in item 4.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 19-20:

Examples of preferred positive electrode active materials include  $\text{MnO}_2$  (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claim 28:

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The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be  $\text{LiCF}_3\text{SO}_3$  (Li-trifluoromethane sulfonate) (P0450).

Miyaki et al disclose an electrochemical battery in accordance with the aspect mentioned above. However, the preceding reference fails to expressly disclose the specific electrolyte containing the specific lithium-bis(oxalato)borate.

As to claims 1-2, 17-18, 24, 39-40, 43, 45-46:

Wietelmann et al discloses the use of lithium bisoxalato borate as a conducting salt in lithium batteries (Title/ Abstract/ Col 1, lines 5-8/ Col 2, lines 25-26, 40-45, 63-64/ CLAIM 1 & 14). Wietelmann et al CLEARLY discloses the beneficial effects of using the same including being an electrochemically stable lithium compound which as a good solubility in aprotic solvents used by battery industry; having an excellent oxidation resistance; excellent conductivity; easily soluble in both water and aprotic solvents and being fully stable up to certain battery working temperatures (COL 2, lines 20-65).

In view of the above, it would have been obvious to a skilled practitioner at the time the invention was made to use the specific lithium-bis(oxalato)borate of Wietelmann et al in the electrolyte of Miyaki et al because Wietelmann et al describes the beneficial effects of using the same including being an electrochemically stable lithium compound which as a good solubility in aprotic solvents used by battery industry; having an excellent oxidation resistance; excellent conductivity; easily soluble in both water and aprotic solvents and being fully stable up to certain battery working temperatures (COL 2, lines 20-65). *Note that Miyaki et al is not limited to a single Li-salt itself as it discloses multiple examples of suitable Li-salts soluble in solvents and using a plurality of those Li-salts together. In view of this, the teaching of Wietelmann et al that*



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*lithium-bis(oxalato)borate is a suitable conducting salt in lithium batteries provides sufficient guidance to combine, mix or substitute Wietelmann et al's Li-salt with/for the lithium salts of Miyaki et al.*

However, none of the preceding references expressly disclose the specific concentration of the bis(oxalate)borate salt.

As to claims 1, 12, 17, 24, 39, 43 and 45:

In this respect, Furbringer discloses that it is known in the art to use bis(oxalate)borate in a molar amount of at least about 0.1 M (COL 2, lines 27-33). *Note that independent claims 1, 17, 39 and 45 call for "an electrolyte containing a bis(oxalato)borate salt" per se, and therefore, the bis(oxalate)borate material of Furbringer still reads on applicant's material.*

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to use the specific concentration of bis(oxalate)borate of Furbringer in the electrochemical cell of Miyaki et al and Wietelmann et al because Furbringer discloses that such a bis(oxalate)borate material, when used in the claimed amount, assists in the desired reaction to increase selectivity and yield of the chemical system, and it neither corrosive nor toxic, and does not pollute the environment. The teachings of Furbringer are pertinent to both the field of applicant's endeavor and to Miyaki et al and Wietelmann et al because Furbringer is also concerned with the optimization of a chemical system. Thus, they all address the same problem of providing suitable materials for chemical reacting systems. Note that an electrochemical cell is also a chemical reacting system. *The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. Stated differently, applying a known technique to a*

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*known device (methods or product) ready for improvement to yield predictable results is prima-facie obvious. KSR International Co. v. Teleflex Inc., 550 US- 82 USPQ2d 1385, 1396 (2007).*

Further, generally speaking, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, it is prima-facie obvious to choose or select the specific amount of the Li-salt. *See MPEP 2144.05 Obviousness of Ranges.*

11. Claims 1-5, 12, 17-20, 24, 28, 39-40, 43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al 2002/0114993 in view of the publication DE 10049097 (herein called the DE’097), and further in view of Furbringer 5886196.

As to claims 1, 17, 39, 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include MnO<sub>2</sub> (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a

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negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 19-20:

Examples of preferred positive electrode active materials include  $\text{MnO}_2$  (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claim 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be  $\text{LiCF}_3\text{SO}_3$  (Li-trifluoromethane sulfonate) (P0450).

Miyaki et al disclose an electrochemical battery in accordance with the aspect mentioned above. However, the preceding reference fails to expressly disclose the specific electrolyte containing the specific lithium-bis(oxalato)borate.

As to claims 1-2, 17-18, 24, 39-40, 43, 45-46:

The DE'097 discloses that lithium batteries (both primary and secondary battery cells) commonly used contain ionically conducting electrolytes including a conducting salt such as

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lithium bis(oxalate)borate (P0002). The DE'097 goes on to imply that said salt is good for use in a battery because it decomposes more or less rapidly in the presence of protic compounds (solvents) (P0002).

In view of the above, it would have been obvious to a skilled practitioner at the time the invention was made to use the specific lithium-bis(oxalato)borate of the DE'097 in the electrolyte of Miyaki et al because the DE'097 teaches that such a specific Li-salt find utility in lithium battery applications because it is an ionically conducting salt and decomposes more or less rapidly in the presence of solvents. *Note that Miyaki et al is not limited to a single Li-salt itself as it discloses multiple examples of suitable Li-salts soluble in solvents and using a plurality of those Li-salts together. In view of this, the teaching of the DE'097 that lithium bis(oxalato)borate is a suitable conducting salt for use in lithium batteries provides sufficient guidance to combine, mix or substitute the DE'097's Li-salt with/for the lithium salts of Miyaki et al.*

However, none of the preceding references expressly disclose the specific concentration of the bis(oxalate)borate salt.

As to claims 1, 12, 17, 24, 39, 43 and 45:

In this respect, Furbringer discloses that it is known in the art to use bis(oxalate)borate in a molar amount of at least about 0.1 M (COL 2, lines 27-33). *Note that independent claims 1, 17, 39 and 45 call for "an electrolyte containing a bis(oxalato)borate salt" per se, and therefore, the bis(oxalate)borate material of Furbringer still reads on applicant's material.*

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to use the specific concentration of bis(oxalate)borate of Furbringer in the electrochemical cell of Miyaki et al and

the DE'097 because Furbringer discloses that such a bis(oxalate)borate material, when used in the claimed amount, assists in the desired reaction to increase selectivity and yield of the chemical system, and it neither corrosive nor toxic, and does not pollute the environment. The teachings of Furbringer are pertinent to both the field of applicant's endeavor and to Miyaki et al and the DE'097 because Furbringer is also concerned with the optimization of a chemical system. Thus, they all address the same problem of providing suitable materials for chemical reacting systems. Note that an electrochemical cell is also a chemical reacting system. *The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. Stated differently, applying a known technique to a known device (methods or product) ready for improvement to yield predictable results is prima-facie obvious. KSR International Co. v. Teleflex Inc., 550 US- 82 USPQ2d 1385, 1396 (2007).* Further, generally speaking, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, it is prima-facie obvious to choose or select the specific amount of the Li-salt. ***See MPEP 2144.05 Obviousness of Ranges.***

12. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Miyaki et al 2002/0114993 in view of Wietelmann et al 6506516 and Furbringer 5886196; and/or b) Miyaki et al 2002/0114993 in view of the publication DE 10049097 (herein called the DE'097)

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and Furbringer 5886196 as applied to the preceding claims above, and further in view of Krause et al 5691081.

Miyaji et al, Wietelmann et al, the DE'097 and Furbringer are all applied, argued and incorporated herein for the reasons discussed above. Nonetheless, none of the foregoing references expressly suggest the specific dimension of the aluminum surface, and the steel surface.

Concerning claims 14-16 and 55-58:

Krause et al disclose lithium-based batteries (TITLE) including either primary or secondary batteries (COL 7, lines 55-58) comprising a Li-anode (COL 7, lines 34-40) and a cathode containing at least manganese (COL 7, lines 34-55); an electrolyte containing Li-salt in an amount ranging from at least 0.1 M (COL 6, lines 57-63/COL 5, line 20-26) and an aluminum cathode current collector having a thickness of 0.51 mm (COL 12, lines 53-55/CLAIM 1/Abstract/COL 1, lines 15-22 & lines 60-61). Krause et al use a steel-based materials such as chromium steel and stainless steel as the cell can 10 (Col 12, lines 54-60).

Based on the aforementioned, it would have been obvious to a skilled artisan at the time the invention was made to use the specific Al current collector and its dimension of Krause et al in any one of the cell battery of Miyaji et al, Wietelmann et al, Jow et al and the DE'097, as combined above, because Krause et al disclose that batteries comprising the specific Al current collector (Al-surface portion) having the specified dimension exhibits high voltages and optimal performance characteristics such as unrestricted operating temperature ranges, suitable discharge/charge rates and adequate cycling performance, particularly when Al components are used. *Moreover, where the only difference between the prior art and the claims is a recitation of*

*relative dimensions (i.e. changes in size/proportion) of the claimed feature and a feature having the claimed relative dimensions would not perform differently than the prior art device, element or member, the claimed device/element/member is not patentably distinct from the prior art device/element/member. That is, limitations relating to the size of the feature/element/member are not sufficient to patentably distinguish over the prior art as it is noted that changes in size is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular size or dimension of the claimed Al portion is significant. In re Rose 105 USPQ 237; In re Rinehart 189 USPQ 143; In Gardner v. TEC Systems, Inc., 220 USPQ 777 & 225 USPQ 232, (See MPEP 2144.04 [R-I] Legal Precedent as Source of Supporting Rationale).*

With regards to the steel surface, it would have been obvious to a person of ordinary skill at the time of invention to use the steel-based material of Krause et al to make the housing (the cell can) of Miyaji et al, Wietelmann et al, the DE'097 and Furbringer, as combined above, because Krause et al teach that such a housing material is an effective material to contain or enclose battery components as it is adaptable to the battery chemical environment, and is easy to be sealed. *In this respect, the claim would have been obvious because the substitution of one known element (one metal based housing element) for another (other metal based housing element) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Stated differently, simple substitution of one known, equivalent element for another to obtain predictable results is prima-facie obvious. KSR International Co. v. Teleflex Inc., 550 US- 82 USPQ2d 1385, 1396 (2007). The predictable result of using the steel-based housing material of Krause et al as the housing material in the battery of Birke-Salam et al is that it is an*

*effective material for housing battery components under the battery's specific chemical environment.*

***Response to Arguments***

13. Applicant's arguments with respect to the foregoing claims have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments also included the Rule 1.131 declaration filed on 06/04/08.

14. The applicant overcame all of the 35 USC 103 rejections except for the one based upon Krause et al'081. However, the 35 USC 102 rejection was not satisfactorily overcome.

In this regard, applicant has contended that “*The claims do not cover an electrolyte including no bis(oxalato)borate salt*”. *An electrolyte containing no bis(oxalato)borate salt does not include a bis(oxalato)borate salt. The 0.1 M limitation simply provides an upper limit on the quantity of bis(oxalato)borate salt in the electrolyte. But the electrolyte still must include some bis(oxalato)borate salt (at a concentration of less than 0.1 M) to be within the claims.*” However, this is still insufficient to overcome the anticipation analysis as set forth supra. In reply, the examiner largely disagrees with applicant's interpretation of the language in question because in the same manner that the limitation 0.1 M provides an upper limit, there must be a lower limit in the present claims, otherwise they would be indefinite; and such a lower limit is still UNSPECIFIED; and because the lower limit is not stipulated in the instant claims, it is not unreasonable to say that such a limitation still implies zero (0) as the lower limit.

Thus, if zero (0) is not intended as the lower limit for the claimed range of the salt concentration as instantly argued by the applicant, then there should not be any problem or issue



to provide a REAL number greater than zero (0) as the lower limit as long as it is properly supported by the as-filed specification. If applicant thinks that such a limitation does not include 0 M as a concentration or does not cover an electrolyte including no bis(oxalato)borate salt, then, applicant should have no problems at all to further limit the present claims to include what he/she regards as the lower limit now implied by the claimed invention. Note that applicant's interpretation appears to suggest that there is a lower limit implicitly recited in the present claims. If such is the case, then, in the end, based on applicant's interpretation, the stipulation of such a lower limit as requested by the examiner should carry the same effect as the argument raised by the applicant that the claims must include some bis(oxalato)borate salt, right?

It is noted that the present claims include the limitation that the electrolyte contains the bis(oxalato)borate salt at a concentration that is equal to or less than about 0.1 M (claims 1, 17, 39 and 45) and 0.05M (claims 12, 24, 43). Therefore, that limitation still includes zero (0) as a lower limit. Accordingly, the foregoing limitation also reads on free of "LiBOB" (the claimed Li-salt) or "0 mol % or mass % or volume % at all" of LiBOB (See MPEP 2173.05(c) Numerical Ranges & Amounts Limitations, II. Open-ended Numerical Ranges. Note that the electrolyte of Miyaki et al can contain Li-salts other than LiBOB. This interpretation is provided herein because the Examiner remains unsure about the intended scope (extent) of the applicant's invention. In fact, there is no question that a reasonable interpretation of the above claims is that the concentration of the claimed Li-salt be zero (0). *If that is the case, a plurality of references would read on applicant's invention.*

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Raymond Alejandro/  
Primary Examiner, Art Unit 1795